The KS-252 from ViaSat is the NEW Air Force standard for securing Telemetry, Tracking, and Commanding (TT&C) in Ground Operating Equipment (GOE). Capable of protecting TS/SCI and below data, the flexible KS-252 is configurable for multiple cryptographic functions using industry standard Ethernet interfaces for both data and control. The KS-252 enables users to replace their expensive, aging, legacy GOE TT&C equipment with a modern, smaller, lower-cost, and lower-maintenance device. Additionally, the KS-252 is software reprogrammable, offering a means to upgrade or modify its functionality for future applications.

The heart of the KS-252 is ViaSat’s field-proven, flexible, scalable PSIAM™ cryptosystem core that supports secure algorithm management and key management functions. The KS-252 is an End Cryptographic Unit (ECU) that has been NSA certified for protecting TS/SCI and below data. It implements five of the most common space-related cryptographic algorithms used for TT&C, including their associated command authentication functions.

The KS-252 supports IP datagram encryption over a 10/100Base-T physical Ethernet interface, using TT&C tailored interfacing and key management to provide interoperability with TT&C algorithms. The IP interface allows for modernization away from current proprietary legacy interfaces to an industry standard IP interface. By enabling the use of COTS devices in a network-centric infrastructure the KS-252 reduces setup and life-cycle costs, simplifies maintenance, and increases reliability.

KS-252 AT-A-GLANCE

**NSA-CERTIFIED FOR TT&C TS/SCI AND BELOW**

- Commanding Algorithms
  - CARDHOLDER
  - INSCOE/KG-29
  - INY/KI-23
- Telemetry Algorithms
  - BELSHAZZAR (PEGASUS)
  - GOODSPEED/KG-28
- Bypass (Uplink and Downlink)

**AEROSPACE VEHICLE EQUIPMENT SIMULATION MODES**

- Command authentication modes with CARDHOLDER, INSCOE/KG-29, or INY/KI-23
- Status available in-line with traffic and through the web-enabled HMI interface
- Programmable vehicle command counter

**CRYPTO-MODERNIZATION CENTRIC**

- UDP/IPv4 traffic interface
- Reprogrammable encryption functions
- Key management and encryption agile
- Software upgradable

**LIGHT WEIGHT, COMPACT SIZE**

- Less than 6.5 lb
- Two KS-252s fit side-by-side in a standard 19 in x 1U rack
  - Two-device 1U rugged rack mount available (P/N 1123446)
**SPECIFICATIONS**

**TT&C ALGORITHMS**
- **Algorithm**
  - BELSHAZZAR (PEGASUS): 1 bps to 70 Mbps
  - CARDHOLDER: 1 bps to 22 Mbps
  - GOODSPEED/KG-28: 1 bps to 70 Mbps
  - INSCOE/KG-29: 1 bps to 10 Mbps
  - INY/KI-23: 1 bps to 10 Mbps
  - BYPASS: 1 bps to 70 Mbps

**RED AND BLACK INTERFACE – ETHERNET**
- **Protocols Supported**
  - UDP (Traffic), TCP/IP (RED HMI), IPv4, ICMP, ARP
- **Electrical/Mechanical**
  - IEEE 802.3; 10/100 Mbps copper, RJ-45

**COMSEC CHARACTERISTICS**
- **Flexibility**
  - Reprogrammable architecture
- **Key Fill Interface**
  - DS-101
- **Storage**
  - > 2,048 keys
- **Short Title**
  - Locally and remotely readable
- **Key Retention**
  - Up to 9 months without power; 5 years storage life with shipping battery installed and kept at 25° C
- **Crypto Ignition Key**
  - CIK removal to UNCLASSIFIED CCI

**PHYSICAL**
- **Dimensions (WHD)**
  - 7.5 x 1.68 x 11.9 in; 190.5 x 42.7 x 302.2 mm
- **Weight**
  - 6.5 lb; 2.9kg
- **With Available AC/DC Power Supply**
  - 115 VAC ±10%, 50/60 Hz
- **Power Supply**
  - +5 VDC and +3.3 VDC; 13.7W typical

**RELIABILITY AND MAINTENANCE**
- **Predicted MTBF**
  - 246,755 hr
- **MTTR**
  - < 15 min
- **Other**
  - Extensive power up and online BIT

**ENVIRONMENT**
- **Operating Temperature**
  - 0° to 50° C
- **Non-Operating Temperature**
  - -20° to 70° C
- **Operating Altitude**
  - Up to 50,000 ft
- **Non-Operating Altitude**
  - Up to 69,000 ft
- **Non-Operating Rapid**
  - 27,000 ft to 69,000 ft in 15 seconds

**DECOMPRESSION**
- **Shock**
  - MIL-STD-810F 516.5 Procedure I SRS curve: 9 to 45 g from 10 Hz to 45 Hz w 6dB slope, 45 g from 45 Hz to 2000 Hz
- **Vibration**
  - MIL-STD-810F 514.5 Procedure I; MIL-STD-810F, 516.5, Procedure I, ground equipment with a peak acceleration of 40g
  - RTCA-DO-160E, Section 8, Category S, Curve B: 0.012g²/Hz for 10 to 40 Hz, 0.012g²/Hz to 0.002g²/Hz for 40 to 100 Hz, 0.002g²/Hz to 0.00013g²/Hz for 500 Hz, and 0.002g²/Hz to 0.00013g²/Hz for 500 to 2000 Hz for 1 hr each on three main orthogonal axes
- **EMI/EMC**
  - FCC Class B and EN 55022 Class B
- **Humidity (Non-Condensing)**
  - 95% @ -60° C for 96 hours per MIL-STD-810F, Method 507.4

**CERTIFICATION**
- **NSA Certified for TS/SCI and Below**
- **TEMPEST Compliant**
  - NSTISSAM 1/92

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